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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/812,529	03/20/2001	Koichiro Tanaka	SEL 246	2316

7590 03/18/2004

COOK, ALEX, McFARRON, MONZO,  
CUMMINGS & MEHLER, LTD.  
SUITE 2850  
200 WEST ADAMS STREET  
CHICAGO, IL 60606

EXAMINER

BOOTH, RICHARD A

ART UNIT	PAPER NUMBER
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2812

DATE MAILED: 03/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 09/812,529	<b>Applicant(s)</b> TANAKA, KOICHIRO	
	<b>Examiner</b> Richard A. Booth	<b>Art Unit</b> 2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-13 is/are allowed.
- 6) ☒ Claim(s) 14-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/11/04 has been entered.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 14-17, 23-30, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al, U.S. Patent 5,365,080 in view of Yamazaki et al., U.S. Patent 5,627,084.

Yamazaki et al. shows the invention substantially as claimed including forming a non-single crystalline silicon film, for example, an amorphous silicon film 102 (see col. 3-lines 1-14) over a substrate, irradiating the amorphous semiconductor film with a first laser beam, for example, an excimer laser to form a first crystalline semiconductor film, and irradiating the amorphous semiconductor film with a second laser beam, for example, a YAG laser to form a second crystalline semiconductor film (see col. 4-line 51 to col. 5-line 6). Furthermore, Yamazaki et al. also teaches that the above device can be used in a LCD device (see col. 1-lines 9-12). Additionally, it is well known that excimer lasers commonly operate in a range of approximately 308nm.

Yamazaki et al. '080 is applied as above but lacks anticipation of the second laser having a wavelength of from 370-650 nanometers, for example, a second harmonic of a YAG laser, and the semiconductor device being part of a cellular phone, video camera, digital camera, projector, goggle type display, a personal computer, a DVD player, an electronic book, or a portable information terminal. With respect to the various devices, it would have been obvious to utilize the semiconductor device formed in the '080 patent in any of these devices since all the devices mentioned above utilize such a semiconductor device. Regarding the wavelength of the second laser, Yamazaki et al. '084 discloses a second harmonic of a YAG laser being usable for

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annealing semiconductor layers (see col. 3-lines 46-54).

In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a second harmonic of a YAG laser as the second laser in the primary reference of '080 because the '084 patent shows this as being a suitable wavelength for the annealing of semiconductor layers.

Claims 18-22 and 31-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al., U.S. Patent 5,365,080 in view of Yamazaki et al., U.S. Patent 5,627,084 as applied to claims 14-17, 23-30, and 41 above, and further in view of Kato et al., U.S. Patent 5,589,406.

Yamazaki et al. '080 and Yamazaki et al. '084 show many features of the invention but fail to expressly disclose patterning to form islands after the laser crystallization.

Kato et al. discloses laser annealing to crystallize a semiconductor layer followed by patterning to form islands (see col. 16-lines 45-65). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the process of Yamazaki et al. '080 modified by Yamazaki et al. '084 so as to perform laser annealing and subsequently pattern the islands because Kato et al. shows this to be a suitable method of making a thin film transistor array.

***Allowable Subject Matter***

Claims 1-13 are allowed.

### ***Conclusion***

This is a RCE of applicant's earlier Application No. 09/812,529. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard A. Booth whose telephone number is (571) 272-1668. The examiner can normally be reached on Monday-Thursday from 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling can be reached on (571) 272-1679. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Richard A. Booth', with a stylized flourish at the end.

Richard A. Booth  
Primary Examiner  
Art Unit 2812

March 16, 2004